

19



Octrooi Centrum
Nederland

11

2022246

12 **B1 OCTROOI**

21 Aanvraagnummer: **2022246**

22 Aanvraag ingediend: **19 december 2018**

62 Afsplitsing van aanvraag , ingediend

51 Int. Cl.:

B32B 27/28 (2019.01) **B32B 27/08** (2019.01) **B32B 1/00** (2019.01) **B32B 27/32** (2019.01)

30 Voorrang:
22 december 2017 EP 17210227.9

41 Aanvraag ingeschreven:
2 juli 2019

43 Aanvraag gepubliceerd:
4 juli 2019

47 Octrooi verleend:
24 oktober 2019

45 Octrooischrift uitgegeven:
25 oktober 2019

73 Octrooihouder(s):
FLEXOPACK S.A. te Koropi, Griekenland, GR

72 Uitvinder(s):
Gkinosatis Dimitris te Koropi (GR)

74 Gemachtigde:
mr. ir. J. van Breda c.s. te Amsterdam

54 **FIBC LINER FILM**

57 The invention relates to plastic film preferably with a thickness of 50 to 300 microns, comprising a polyolefin homopolymer or copolymer, a polyether copolymer having a melting point between 100°C and 120°C and a layer comprising oxygen barrier polymer.

FIBC LINER FILM

The invention relates to plastic film preferably with a thickness of 50 to 300 microns, comprising a polyolefin homopolymer or copolymer, a polyether copolymer having a melting point between 100°C and 120°C and a layer comprising oxygen barrier polymer.

BACKGROUND

Plastic containers have been increasingly used in packaging applications, such as "food packaging". A typical plastic container often used for bulk packaging of food (e.g. powdery food, coffee, cocoa, nuts) is called FIBC (= flexible intermediate bulk container). This type of container often is a woven polyethylene or polypropylene.

In the inside or outside of the woven material, another plastic liner is often used. This liner is a monolayer or a multilayer and comprises polymer materials. There are different types of adherence of this liner to the outer woven liner as shown e.g. in US 6,374,579.

In the case of a multilayer, the different layers offer different advantages to the final applications. The inside layer (= the layer coming into direct contact with the food packed) is often formulated to allow very good sealing, thus protecting from the existence of leakers that would be detrimental for the packed product. Other layers may comprise abuse resistant polymers to increase the mechanical strength of the material.

In case of oxygen sensitive food materials, at least one layer of the multilayer construction comprises material which is impermeable to oxygen. As it is well known in the art, such materials are e.g. polyamides, PVDC or EVOH.

Often the multilayer film is in "gusseted tube" configuration. The reason is that this configuration is more practical for bulk filling, transport and unloading versus a simple tube.

Gussets are produced in line with the process by the use of two "pleating constructions" (often wooden or metal boards) which the film follows. As these multilayer tube materials are often produced with the "hot blown film" method which involves

rotation of the collapsing frame-nip roll section, a common problem is that creases are present continuously or periodically following the rotation and this increases the scrap and lowers the efficiency of the operation. There are cases where
5 the creases are so often that the tubular film cannot be processed into a gusseted tube.

It is generally known in the art that less stiff polymers e.g. LDPE have better gussetability versus stiffer ones like HDPE. It is believed that the material must be softer and more
10 pliable in order to form efficiently a gusset during the production process. Barrier materials with high oxygen barrier properties such as EVOH or polyamide make the gusseting process even more difficult as they are usually stiffer than polyolefins.

Patent application EP 3 216 599 A1 teaches a way to improve gussetability by using a polyether copolymer (with polyamide or polyolefins) in blend with polyolefins in at least
15 one layer of the film. This invention has the drawback that sealing temperatures start from 140°C to 160°C i.e. in conditions higher than pure polyolefins such as polyethylene. There
20 is a need to move the sealing temperature "window" to lower temperatures e.g. down to 120°C in order to produce liners at same or similar conditions with normal polyethylene non-barrier liners.

There is further a need to improve the gussetability of the plastic structure ie to find materials pliable enough and with enough bubble stability to produce gussets with no
25 creases in the commonly used thickness range of 50-300 microns without sacrificing the oxygen barrier properties of the plastic film. There is also a need to combine this improvement in
30 gussetability with the above requirements in sealing at low temperatures.

SUMMARY OF THE INVENTION

It has been unexpectedly found that the addition of polyether copolymers with melting point of 100°C to 120°C in
35 blends with polyolefins improve very much the gussetability of oxygen barrier plastic films and at the same time lower the seal initiation temperature of the film to 120°C.

According to the invention a very suitable film for the FIBC liner has preferably an average thickness of 50 to 300, more preferably an average thickness of 60 to 150, most preferably an average thickness of 60 to 130 microns and comprises

- * a polyolefin homopolymer or copolymer
- * polyether copolymer having a melting point in the range of 100°C to 120°C,
- * an oxygen barrier material such as EVOH, polyamide or PVDC

Further preferred embodiments of the invention will be explained in the detailed description of the invention.

DEFINITIONS

In this application the following definitions are used:
The term "gusset" is interpreted as well known in the art. That is a plastic tubular film having a partial 4-fold configuration.

The term "film" refers to a flat or tubular flexible structure of thermoplastic material.

The term "heat shrinkable" refers to a film that shrinks at least 10% in at least one of the longitudinal and transverse directions when heated at 90°C for 4 seconds. The shrinkability is measured according to ASTM 2732.

The phrase "longitudinal direction" or "machine direction" herein abbreviated "MD" refers to a direction along the length of the film.

The phrase "outer layer" refers to the film layer which comes in immediate contact with the outside environment (atmosphere).

The phrase "inner layer" refers to the film layer that comes in direct contact with the product packed. This is also called "sealing layer" as this layer must be hermetically sealed in order to protect the product from ingress of air.

The phrase "intermediate layer" refers to any layer of the film that is neither outer nor inner layer. A film may comprise more than one intermediate layers.

As used herein, the term "homopolymer" refers to a polymer resulting from polymerization of a single monomer.

As used herein, the term "copolymer" refers to a polymer resulting from polymerization of at least two different polymers.

As used herein, the term "polymer" includes both above
5 types.

As used herein, the term "polyolefin" includes all the polymers produced by polymerization of olefins. Polyethylene, polypropylene, polybutylene and other products are included in this general category.

As used herein the term "polyethylene" identifies polymers consisting essentially of the ethylene repeating unit. The ones that have a density more than 0.940 are called high density polyethylene (HDPE), the ones that have less than 0.940 are low density polyethylene (LDPE).

As used herein the phrase "ethylene alpha olefin copolymer" refers to polymers like linear low-density polyethylene (LLDPE), medium density polyethylene (MDPE), very low density polyethylene (VLDPE), ultra-low density polyethylene (ULDPE), metallocene catalysed polymers and polyethylene plastomers and
20 elastomers.

In these cases, the alpha olefin can be propene, butene, hexene, octene etc as known in the art.

As used herein the term "homogeneous ethylene alpha olefin copolymers" refer to ethylene alpha olefin copolymers having a molecular weight distribution MWD (M_w/M_n) of less than 2.7 as measured by GPC. Typical examples of these polymers are AFFINITY from DOW or Exact from Exxon.

As used herein the phrase "styrene polymers" refers to styrene homopolymer such as polystyrene and to styrene copolymers such as styrene-butadiene copolymers, styrene-butadiene-styrene copolymers, styrene-isoprene-styrene copolymers, styrene-ethylene-butadiene-styrene copolymers, ethylene-styrene copolymers and the like.

As used herein the phrase "ethylene methacrylate copolymers" refers to copolymers of ethylene and methacrylate monomer. The monomer content is less than 40% by weight. Abbreviation used is EMA.

As used herein the phrase "ethylene vinyl acetate copolymer" refers to copolymers of ethylene and vinyl acetate. Abbreviation used is EVA.

As used herein the term "oxygen barrier polymer" refers to polymers that do not allow the ingress of oxygen in packs. Typical materials are polyamide, EVOH or PVDC.

As used herein, the term EVOH refers to saponified products of ethylene vinyl ester copolymers. The ethylene content is typically in the range of 25 to 50% per mol.

As used herein the term PVDC refers to a vinylidene chloride copolymer wherein a major amount of the copolymer comprises vinylidene chloride and a minor amount of the copolymer comprises one or more monomers such as vinyl chloride and/or alkyl acrylates and methacrylates.

As used herein the term polyamide refers to homopolymers and copolymers that include amide linkages as well known in the art.

As used herein the term "ionomer" refers to ethylene-acid copolymers which have been neutralized by metals such as sodium, zinc, lithium or others.

The acid used is usually methacrylic or acrylic acid.

As used herein, the term "ethylene acid copolymer" refers to copolymers of ethylene with acid, most usually methacrylic or acrylic acid.

As used herein, the term "polyester" includes crystalline polymers, amorphous polymers and polyester elastomers. Common polyesters are crystalline PET (polyethylene terephthalate), amorphous PET, PETG (glycol modified polyethylene terephthalate), PBT (polybutylene terephthalate), PTT (polytrimethylene terephthalate), PBN (polybutylene naphthalate), PEN (polyethylene naphthalate), polyester-ether block copolymers and polyester-ester block copolymers of hard and soft blocks.

Other polyester materials are also included in the above definition.

As used herein the term "polybutylene" refers to butene-1 homopolymers and copolymers. Useful copolymers comprise ethylene mer units. Ethylene content should be generally less than 50% by weight.

All measurement methods mentioned herein are readily available for the skilled person. For example, they can be obtained from the American National Standards Institute at:

www.webstore.ansi.org

5 All percentages used are per weight unless stated otherwise.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a film comprising

- 10
- * a polyolefin homopolymer or copolymer
 - * a polyether copolymer having melting point in the range of 100°C to 120°C
 - * an oxygen barrier material.

15 In a preferred embodiment, the film is in the form of gusseted tube.

In a further preferred embodiment, the average thickness of the film is in the range 50-300 microns, preferably 60-150 microns, more preferably 60-130 microns.

20 In a further preferred embodiment, the polyolefin homopolymer or copolymer is an ethylene alpha olefin copolymer. In a further preferred embodiment, the alpha olefin is butene, hexene or octene. In a further preferred embodiment, the ethylene alpha olefin copolymers are produced with metallocene

25 catalysts.

FILM CONSTRUCTION

Preferably the film comprises 5 to 15 layers, more preferably 7 to 12 layers.

30 A typical example of the film construction in 7-layer mode is

Outer layer/intermediate layer/tie layer/barrier layer/tie layer/intermediate layer/inner layer

The film is preferably produced by the hot blown film

35 method and is not heat shrinkable.

Barrier layer(s)

The film in a preferable embodiment contains high oxygen barrier materials so that it protects the components of the

pack from the detrimental effect of oxygen ingress. EVOH is a preferred option but also polyamide and PVDC are viable alternatives. The EVOH comprises preferably 24% to 50% ethylene per mol, more preferably 27% to 48%.

5 In another preferred embodiment of the invention, the barrier polymer is polyamide. Most suitable polyamides are polyamide 6 and copolymer 6/66 or 6/12.

Intermediate layer(s)

10 Preferably, the intermediate layers comprise different polyolefins. Preferred polyolefins are ethylene alpha olefin copolymers, where alpha olefin is preferably butene, hexene or octene.

15 In a preferred embodiment the ethylene alpha olefin copolymers are random copolymers with densities from 0.870 g/cm³ up to 0.960 g/cm³. In a further preferred embodiment, the molecular weight distribution MWD (M_w/M_n) as measured by GPC of the ethylene alpha olefin copolymers is less than 10, preferably less than 5, preferably less than 3.

20 Tie layer(s)

As well known in the art, there is no natural adhesion between polyolefins and oxygen barrier polymers such as EVOH.

25 Suitable materials for the tie layer process include maleic anhydride modified EVA, maleic anhydride modified polyethylene, maleic anhydride modified EMA, maleic anhydride modified elastomer, partially saponified EVA copolymer and polyurethane elastomer.

30 In the tie layers also polyamides can be used, given the strong natural adhesion between polyamide and EVOH. Preferred polyamides are polyamide 6, polyamide 6/66 and polyamide 6/12.

Outer layer

35 The outer layer of the film preferably comprises ethylene alpha olefin copolymers and/or low-density polyethylene (LDPE) produced by Ziegler Natta or metallocene catalyst. Polypropylene, ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ionomer, polyester and polyamide is also possible.

Inner layer

The inner layer of the film would be able to seal the film to itself to secure that no leakers and oxygen influx is allowed. This could be detrimental to the product packed.

Suitable materials for the inner layer include different polyolefins, preferably ethylene alpha olefin copolymers, low density polyethylene, polypropylene, ethylene vinyl acetate, ethylene methyl acrylate, ionomer, ethylene butyl acrylate and the like.

In general, the above layers may comprise further well known in the art additives such as antiblock, slip, antifog, polymer processing enhancers and others.

Polyether copolymers

We have unexpectedly noticed that by adding polyether copolymers having a melting point of 100°C to 120°C in the inner layer, the seal initiation temperature of the film drops to 120°C while the gussetability of the film remains very good. The film is nicely transformed inline to a gusseted tube without any creasing during the whole rotation of the collapsing frame. Preferably, the polyether copolymers having a melting point of 100°C to 120°C are added in the inner layer, in an amount of 5% to 20% by weight.

Preferred polyether copolymers are copolymers with polyolefins, polyamides or polyester. A typical example of a polyether copolymer useful for the invention is Pelestat LM230 from Sanyo Chemical.

In a preferred embodiment the melting points of the polyether copolymers are in the range 100°C to 120°C, preferably 110°C to 120°C. If the melting temperature is lower the gussetability is compromised by the higher friction due to polymer tackiness while if the melting temperatures are higher the sealing initiation temperature increases.

The preferred melt flow index (MFI) of the polyether copolymer is more than 12 at 190°C and 21.18 N measured according to ASTM D 1238.

SEAL INITIATION TEMPERATURE

This term as used in the present application is defined as the lower sealing temperature which allows the average sealing strength (measured according to ASTM F88) to be at least 25N/15mm seal width when the sealing time is 2 seconds, sealing pressure is 4bars and the sealing station is impulse type. Films of the present invention have seal initiation temperature less than 130°C, preferably less than 125°C, preferably less than 120°C, preferably less than 115°C.

MELTING POINT OF POLYETHER COPOLYMER

The melting point of the polyether copolymer is measured by DSC (=differential scanning calorimetry) as well known in the art. The polyether copolymer used in the present invention has a melting point between 100°C and 120°C.

The preferred method for producing the film of the present invention is how blown film as well known in the art.

EXMAPLES

EXAMPLE 1

From a commercial hot blown film line we produced the following film

- * Outer layer, thickness 30 microns
- * Intermediate layer 1, thickness 10 microns
- * Tie layer 1, thickness 8 microns
- * EVOH 38%, thickness 8 microns
- * Tie layer 2, thickness 8 microns
- * Intermediate layer 2, thickness 20 microns
- * Inner layer, thickness 12 microns.

Outer layer was a blend of

89% LDPE+ 10% polyether copolymer+ 1% slip antiblock masterbatch.

LDPE density was 0.923 while MFI was 0.75 under 190C/2.16 kilos

Intermediate layer 1 was a blend of

60% ethylene hexene copolymer+ 40% LDPE

The density of ethylene hexene copolymer was 0.919 while MFI was 1 under 190°C/2.16 kilos
LDPE was same as used in the outer layer.

- 5 Tie layer 1 was maleic anhydride LLDPE based copolymer
Tie layer 2 was similar to tie layer 1
Intermediate layer 2 was exactly the same as intermediate layer 1.
- 10 Inner layer was a blend of
89% metallocene LLDPE +10% polyether copolymer+ 1% slip antiblock masterbatch
Metallocene LLDPE had a density of 0.918 while MFI was 1 under 190°C/2.16 kilos
- 15 Polyether copolymer used was Pelestat LM230 from Sanyo Chemical.

EXAMPLE 2

- In the case of example 2 the LDPE used in the outer layer
20 was replaced by the ethylene hexene copolymer used in intermediate layer 1.

EXAMPLE 3

- In this example, the EVOH 38% was replaced by 32% which
25 is stiffer and thought to be more difficult to form gusset.

COMPARATIVE EXAMPLE

- The comparative example was like example 1 but with the polyether copolymer removed and replaced by MV PEBAX 1074
30 SA01. This material has a melting point of 158°C as measured by differential scanning calorimetry (DSC).

EXAMINING SYSTEM

- On the tower of the blown film line two gusset boards
35 were mounted as known in the art. Each example structure ran in production for 2 hours and the number of creases was monitored. As the creases tend to come along in timely intervals, we recorded "creasing instances", meaning we recorded any

incident when more than 3 creases passed from the nip section of the blown film line.

The rotation speed was kept constant during all experiments.

5

RESULTS

Examples 1 and 2 recorded 2 instances while example 3 recorded 3.

The comparative example recorded 2 instances.

10 Therefore, the invention keeps the good gussetability of the prior art.

SEAL INITIATION.

15 Test of the seal initiation was done in a Toss sealing machine, keeping the sealing time at 2 seconds and seal pressure at 4 bars. Sealing was done inner side to inner side.

The measured seal initiation temperature of example 1 was found to be 120°C while for the comparative example a seal initiation temperature of 170°C has been measured.

20 Aspects of the invention are itemized in the following section.

1. A plastic film comprising

- a polyolefin homopolymer or copolymer
- a polyether copolymer having a melting point in the
- 25 range of 100°C to 120°C, and
- an oxygen barrier material.

2. The plastic film of claim 1, where the thickness of the film is between 50 and 300 microns.

3. The plastic film of claim 2, where the thickness of the

30 film is between 60 and 150 microns.

4. The plastic film of one or more of the preceding claims, where the oxygen barrier material is ethylene vinyl alcohol (EVOH).

5. The plastic film of one or more of claims 1-3, where the

35 oxygen barrier material is a polyamide.

6. The plastic film of one or more of the preceding claims, where the polyolefin is polyethylene or polypropylene.

7. The plastic film of one or more of the preceding claims,
where the polyolefin homopolymer or copolymer is ethylene
alpha olefin copolymer.
- 5 8. The plastic film of claim 7, where the polyether copolymer
is a block copolymer.
9. The plastic film of one or more of the preceding claims,
where the polyether copolymer is polyolefin, polyamide or
polyester copolymer.
- 10 10. The plastic film of one or more of the preceding claims,
where the polyether copolymers are contained in at least
one of outer and inner layers.
11. The plastic films of one or more of the preceding claims,
where the polyether copolymers are contained in both inner
and outer layers.
- 15 12. A gusseted tubular film made of a plastic film of one or
more of the preceding claims.

CONCLUSIES

1. Kunststoffilm omvattende

- een polyolefine homopolymeer of copolymeer
- een polyethercopolymeer met een smeltpunt in het bereik van 100°C tot 120°C, en
- 5 - een zuurstof barrièremateriaal.

2. Kunststoffilm volgens conclusie 1, waarbij de dikte van de film ligt tussen 50 en 300 microns.

3. Kunststoffilm volgens conclusie 2, waarbij de dikte van de film ligt tussen 60 en 150 microns.

10 4. Kunststoffilm volgens één meer van de voorgaande conclusies, waarbij het zuurstof barrièremateriaal ethyleenvinylalcohol (EVOH) is.

5. Kunststoffilm volgens één of meer van de conclusies 1-3, waarbij het zuurstof barrièremateriaal een polyamide is.

15 6. Kunststoffilm volgens één meer van de voorgaande conclusies, waarbij de polyolefine polyethyleen of polypropyleen is.

7. Kunststoffilm volgens één meer van de voorgaande conclusies, waarbij de polyolefine homopolymeer of copolymeer ethyleen alfa-olefinecopolymeer is.

8. Kunststoffilm volgens conclusie 7, waarbij de polyethercopolymeer een blokcopolymeer is.

9. Kunststoffilm volgens één meer van de voorgaande conclusies, waarbij de polyethercopolymeer polyolefine, polyamide of polyestercopolymeer is.

20 10. Kunststoffilm volgens één meer van de voorgaande conclusies, waarbij de polyethercopolymeren in ten minste één van de buitenste en binnenste lagen zijn opgenomen.

11. Kunststoffilmen volgens één meer van de voorgaande conclusies, waarbij de polyethercopolymeren opgenomen zijn in zowel de binnenste als buitenste lagen.

30 12. Verknoopte buisvormige film gemaakt van een kunststoffilm volgens één of meer van de voorgaande conclusies.

ABSTRACT

The invention relates to plastic film preferably with a thickness of 50 to 300 microns, comprising a polyolefin homopolymer or copolymer, a polyether copolymer having a melting point between 100°C and 120°C and a layer comprising oxygen barrier polymer.



RAPPORT BETREFFENDE HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK

Octrooiaanvraag 2022246

Classificatie van het onderwerp ¹ : B32B27/08; B32B27/28; B32B1/00; B32B27/32	Onderzochte gebieden van de techniek ¹ : B32B
Computerbestanden: EPODOC, WPI	Omvang van het onderzoek: Volledig
Datum van de onderzochte conclusies: 19 december 2018	Niet onderzochte conclusies: -

Van belang zijnde literatuur

Categorie ²	Vermelding van literatuur met aanduiding, voor zover nodig, van speciaal van belang zijnde tekstgedeelten of figuren	Van belang voor conclusie(s)
X, D	EP 3216599 A (FLEXOPACK SA) 13 september 2017 * par. [0010], [0011], [0060]-[0063], conclusies 1-11, 13 *	1-12
	- - -	
L	EP 3501822 A (FLEXOPACK SA) 26 juni 2019 * conclusies *	1-12
	- - - - -	
Datum waarop het onderzoek werd voltooid: 29 juli 2019		De bevoegde ambtenaar: Dr. M.W. de Lange Octrooiencentrum Nederland onderdeel van Rijksdienst voor Ondernemend Nederland

¹ Gedefinieerd volgens International Patent Classification (IPC).

² Verklaring van de categorie-aanduiding: zie apart blad.

Categorie van de vermelde literatuur:

- X: op zichzelf van bijzonder belang zijnde stand van de techniek
- Y: in samenhang met andere geciteerde literatuur van bijzonder belang zijnde stand van de techniek
- A: niet tot de categorie X of Y behorende van belang zijnde stand van de techniek
- O: verwijzend naar niet op schrift gestelde stand van de techniek
- P: literatuur gepubliceerd tussen voorrangs- en indieningsdatum
- T: niet tijdig gepubliceerde literatuur over theorie of principe ten grondslag liggend aan de uitvinding
- E: octrooiliteratuur gepubliceerd op of na de indieningsdatum van de onderhavige aanvraag en waarvan de indieningsdatum of de voorrangsdatum ligt voor de indieningsdatum van de onderhavige aanvraag
- D: in de aanvraag genoemd
- L: om andere redenen vermelde literatuur
- &: lid van dezelfde octrooifamilie; corresponderende literatuur



AANHANGSEL

Behorende bij het Rapport betreffende het Onderzoek naar de Stand van de Techniek

Octrooiaanvraag 2022246

Het aanhangsel bevat een opgave van elders gepubliceerde octrooiaanvragen of octrooien (zogenaamde leden van dezelfde octrooifamilie), die overeenkomen met octrooigeschriften genoemd in het rapport. De opgave is samengesteld aan de hand van gegevens uit het computerbestand van het Europees Octrooibureau per 29 juli 2019. De juistheid en volledigheid van deze opgave wordt noch door het Europees Octrooibureau, noch door Octrooicentrum Nederland gegarandeerd; de gegevens worden verstrekt voor informatiedoeleinden.

In het rapport genoemd octrooigeschrift		Datum van publicatie	Overeenkomende octrooigeschriften		Datum van publicatie
EP 3216599	A1	13-09-2017	AU 2017201600	A1	28-09-2017
			CA 2959423	A1	10-09-2017
			CZ 2017133	A3	20-09-2017
			DE 102017203602	A1	14-09-2017
			FR 3048636	A1	15-09-2017
			GB 2548246	A	13-09-2017
			IE 20170059	A1	20-09-2017
			IE 86934	B1	31-10-2018
			NL 2018459	A	19-09-2017
			US 2017259542	A1	14-09-2017
EP 3501822	A1	26-06-2019	AU 2018282358	A1	11-07-2019
			CZ 2018736	A3	03-07-2019
			GB 2570217	A	17-07-2019
			NL 2022246	A	02-07-2019
			US 2019193378	A1	27-06-2019



SCHRIFTELIJKE OPINIE

Octrooiaanvraag 2022246

Indieningsdatum: 19 december 2018	Vorrangsdatum: 22 december 2017																
Classificatie van het onderwerp ¹ : B32B27/08; B32B27/28; B32B1/00; B32B27/32	Aanvrager: FLEXOPACK S.A.																
Deze schriftelijke opinie bevat een toelichting op de volgende onderdelen: <table><tr><td>☒ Onderdeel I</td><td>Basis van de schriftelijke opinie</td></tr><tr><td>☒ Onderdeel II</td><td>Vorrang</td></tr><tr><td>☐ Onderdeel III</td><td>Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk</td></tr><tr><td>☐ Onderdeel IV</td><td>De aanvraag heeft betrekking op meer dan één uitvinding</td></tr><tr><td>☒ Onderdeel V</td><td>Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid</td></tr><tr><td>☒ Onderdeel VI</td><td>Andere geciteerde documenten</td></tr><tr><td>☐ Onderdeel VII</td><td>Overige gebreken</td></tr><tr><td>☐ Onderdeel VIII</td><td>Overige opmerkingen</td></tr></table>		☒ Onderdeel I	Basis van de schriftelijke opinie	☒ Onderdeel II	Vorrang	☐ Onderdeel III	Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk	☐ Onderdeel IV	De aanvraag heeft betrekking op meer dan één uitvinding	☒ Onderdeel V	Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid	☒ Onderdeel VI	Andere geciteerde documenten	☐ Onderdeel VII	Overige gebreken	☐ Onderdeel VIII	Overige opmerkingen
☒ Onderdeel I	Basis van de schriftelijke opinie																
☒ Onderdeel II	Vorrang																
☐ Onderdeel III	Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk																
☐ Onderdeel IV	De aanvraag heeft betrekking op meer dan één uitvinding																
☒ Onderdeel V	Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid																
☒ Onderdeel VI	Andere geciteerde documenten																
☐ Onderdeel VII	Overige gebreken																
☐ Onderdeel VIII	Overige opmerkingen																
	De bevoegde ambtenaar: Dr. M.W. de Lange Octrooicentrum Nederland onderdeel van Rijksdienst voor Ondernemend Nederland																

¹ Gedefinieerd volgens International Patent Classification (IPC).

Schriftelijke Opinie

Octrooiaanvraag 2022246

Onderdeel I Basis van de schriftelijke opinie

Deze schriftelijke opinie is opgesteld op basis van de op 19 december 2018 ingediende conclusies.

Onderdeel II Voorrang

Het controleren van de voorrang maakt geen deel uit van het reguliere onderzoek naar de stand van de techniek. Deze schriftelijke opinie is daarom opgesteld zonder dat onderzocht is of de ingeroepen voorrang geldig is, tenzij hieronder anders is aangegeven.

Onderdeel V Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid

1. Verklaring

Nieuwheid	Ja: conclusie(s)	
	Nee: conclusie(s)	1-12
Inventiviteit	Ja: conclusie(s)	
	Nee: conclusie(s)	
Industriële toepasbaarheid	Ja: conclusie(s)	1-12
	Nee: conclusie(s)	

2. Literatuur en toelichting

In het rapport betreffende het onderzoek naar de stand van de techniek worden de volgende publicaties genoemd:

D1: EP 3216599 A (FLEXOPACK SA) 13 september 2017

Uit D1 is bekend een kunststoffilm omvattende

- een polyolefine homopolymeer of copolymeer
- een polyethercopolymeer met een smeltpunt van 100°C of 110°C, en
- een zuurstof barriëremateriaal.

Zie par. [0010], [0011], [0060]-[0063], conclusie 1.

Conclusie 1 is daarom niet nieuw in het licht van D1.

Ook de maatregelen van de andere conclusies zijn bekend uit D1, zie de conclusies 2-11 en 13.

Onderdeel VI Andere geciteerde documenten

Schriftelijke Opinie

Octrooiaanvraag 2022246

De volgende andere geciteerde openbaarmakingen worden genoemd:

D2: EP 3501822 A (FLEXOPACK SA) 26 juni 2019

Er is geconstateerd dat de huidige aanvraag betrekking heeft op hetzelfde onderwerp als de Europese aanvraag gepubliceerd onder nummer EP 3501822 A, op naam van dezelfde aanvrager, waarbij de voorrangsdatum van de beide aanvragen dezelfde is. In art. 77 Row 1995 is bepaald dat in dat geval het op de huidige aanvraag te verlenen octrooi, voor zover het betrekking heeft op dezelfde uitvinding als het Europese octrooi dat voort kan komen uit deze Europese aanvraag, geen rechtsgevolgen meer zal hebben vanaf het moment dat het Europese octrooi in Nederland van kracht is geworden en een eventuele oppositieprocedure is afgerond.